User's Guide

D845GVSR Motherboard

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Safety Information

Battery Warning Instruction

Caution
If battery is incorrectly replaced there poses a danger of explosion. Replace battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Attention
Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du méme type ou d'un type recommandé par le constructeur. Mettre au rébut les batteries usagées conformément aux instructions du fabricant.

Vorsicht
Explosionsgefahr bei unsachgemäß em Austausch der Batterie. Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebraushter Batterien nach Angaben des Herstellers.

Fuse Warning Instruction

Caution
For continued protection against risk of fire, replace only with same type and rating of fuse. Disconnect input power before servicing. Only connect this equipment to an earthed socket outlet.

Vorsicht
Vor jeder service-arbeit netzstecker ziehen! Apparatet ma kun tilkobles jordet stikkontakt.

Attention
Debrancher avant d'ouvrir. Apparaten skall anslutas till jordat nätuttag.

Atencion
Desconecte fuerza electrica antes del servicio. Laite on liitettävä suojäkosketinistoraasian.

Before You Read

The information in this user's guide is subject to change without notice.

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NOTE

Depending on the model, your computer's components may vary and look slightly different than those pictured.

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Appendix A Specifications

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Chapter 1
Motherboard Description

This chapter describes the major features of your motherboard.

Your motherboard offers the following features:

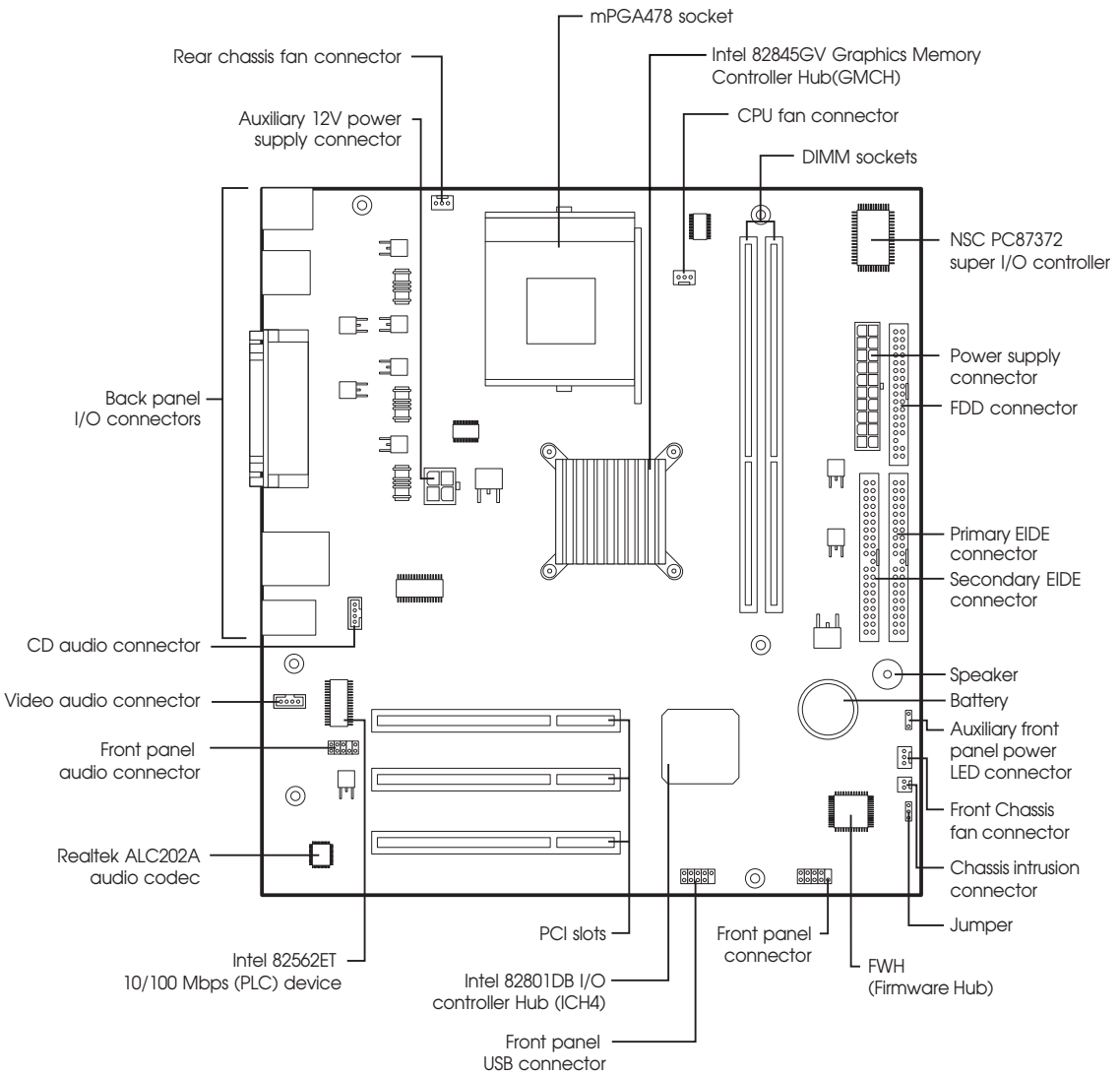
- Micro ATX form factor
- Intel® Pentium® 4 processor in the mPGA 478 pin package
- Two DIMM sockets, expandable up to 2 GB using 1 GB DDR SDRAM modules
- Two built-in Enhanced IDE controllers
- Intel® 82845GV Graphics Memory Controller Hub (GMCH)
- Intel® 82801DB I/O Controller Hub (ICH4)
- Built-in high performance audio CODEC and PCI audio controller in Intel® 82845GV GMCH
- NSC PC87372 super I/O controller
- Intel® 82562ET 10/100 Mbps (PLC) device
- Advanced Power Management (APM) and Advanced Configuration and Power Interface (ACPI)
- Three 32-bit PCI expansion card connectors
- System BIOS and video BIOS shadow RAM
- Plug-and-Play (PnP) BIOS feature
- Password function by using BIOS
- Video memory using main memory

NOTE

The internal graphics device on Intel 82845GV supports Intel Dynamic Video Memory Technology (D.V.M.T). D.V.M.T. dynamically responds to application requirements by allocating the proper amount of display and texturing memory.
As your system has sharing memory architecture using the main memory for video memory, the usable main memory size is less than real size when the computer is running.

- Two PS/2 style connectors for keyboard and mouse
- One video connector
- Four USB 2.0 connectors and one pinheader that supports two USB connectors
- One LAN connector
- One serial port connector
- One parallel port connector
- Three audio jacks

Motherboard Overview

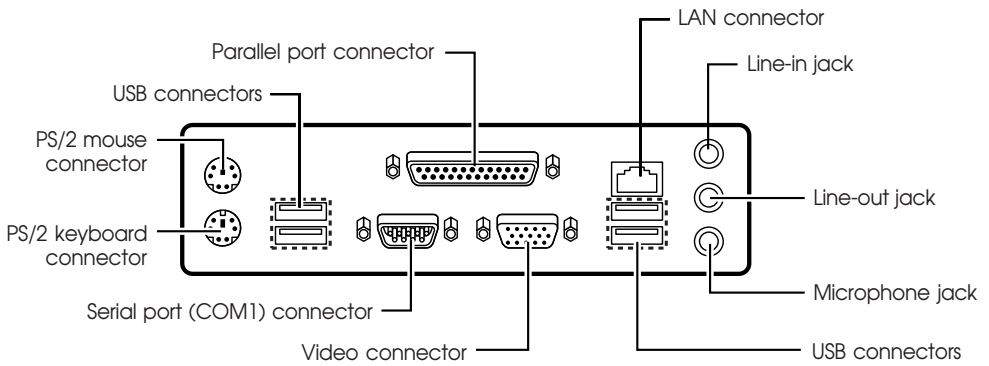


NOTE

The motherboard's components may vary and look slightly different.

Rear Panel Connectors

The motherboard has connectors for peripheral devices.



Chapter 2
Using the BIOS Setup Program

This chapter explains how to use the BIOS Setup program. You can use the Setup program to change the computer's configuration information and boot-up sequence, etc.

About the Setup Program

Your system uses a Phoenix BIOS, which is stored in flash memory on the motherboard. This enables you to run the program at any time when you turn on or reset your computer.

The configuration you define through the Setup program is stored in a special area of memory called CMOS RAM. The battery on the motherboard backs up this memory, so the memory is not erased when you turn off or reset the computer. Whenever you reboot the computer, it checks the settings, and if it discovers a difference between the information in the CMOS RAM and its actual hardware configuration, it prompts you to run the Setup program.

Entering the Setup Program

To enter the Setup program, turn the computer on and press DEL as soon as you see the "emachines" logo.

If you do not press the key quickly, the computer starts loading the operating system.

NOTE

For reference purposes, write down the current Setup settings. When you make changes to the settings, update this record.

When you enter the Setup program, you will see the Setup menu. The legend bar at the bottom of the menu displays function keys used in Setup.

NOTE

The actual menus displayed on your system may differ depending on the hardware and features installed in your computer.

The Setup program is for viewing and changing the BIOS settings for a computer. Setup is accessed by pressing the <DEL> key after the Power-On Self Test (POST) begins and before the operating system boot begins.

The next table shows the menus available from the menu bar at the top of the Setup screen.

Setup Menu Screen	Description
Main	Allocates resources for hardware components.
Advanced	Specifies advanced features available through the chipset.
Security	Specifies passwords and security features.
Power	Specifies power management features.
Boot	Specifies boot options and power supply controls.
Exit	Saves or discards changes to the Setup program options.

The next table shows the function keys available for menu screens.

Setup Key	Description
<F1> or <Alt-H>	Brings up a help screen for the current item.
<Esc>	Exits the menu.
<←> or <→>	Selects a different menu screen.
< ↑ > or < ↓ >	Moves cursor up or down.
<Home> or <End>	Moves cursor to top or bottom of current menu.
<PgUp> or <PgDn>	Moves cursor to previous or next page on scrollable menu.
<F5> or <->	Selects the previous value for a field.
<F6> or <+> or <Space>	Selects the next value for a field.
<F9>	Load the default configuration values for the current menu.
<F10>	Save the current values and exit Setup.
<Enter>	Executes command or selects the submenu.

Help Window

The field help window on the right of each menu displays the help text for the currently selected field. Also, if pressing <F1> on any menu, you will see the General Help.

BIOS Setup Program

Main Menu

This menu reports processor and memory information and is for configuring the system date, system time, floppy options, and IDE devices.

Feature	Options	Description
BIOS Revision	No options	Displays the BIOS revision.
Processor Type	No options	Displays processor type.
Processor Speed	No options	Displays processor Speed.
System Bus Speed	No options	Displays tne system bus speed.
System Memory Speed	No options	Displays the system memory speed.
Cache RAM	No options	Displays the size of second-level cache.
Total Memory	No options	Displays the total amount of RAM.
Memory Bank 0	No options	Displays the memory specification installed in Memory Bank 0.
Memory Bank 1	No options	Displays the memory specification installed in Memory Bank 1.
System Time	Hour, minute, and second	Specifies the current time.
System Date	Month, day, and year	Specifies the current date.

Advanced Menu

This menu is for setting advanced features that are available through the chipset.

Feature	Options	Description
Boot Configuration	No options	Configures Plug and Play. When selected, displays the Boot Configuration submenu.
Peripheral Configuration	No options	Configures peripheral ports and devices. When selected, displays the Peripheral Configuration submenu.
IDE Configuration	No options	Specifies type of connected IDE devices. When selected, displays the IDE Configuration submenu.
Diskette Configuration	No options	Configures the diskette drive. When selected, displays the Diskette Configuration submenu.
Video Configuration	No options	Configures video features. When selected, displays the Video Configuration submenu.
USB Configuration	No options	Configures USB support. When selected, displays the USB Configuration submenu.
FAN Control Configuration	No options	Configures CPU fan speed. When selected, displays the FAN Control submenu.

Boot Configuration Submenu

This submenu is for configuring Plug and Play.

Feature	Options	Description
Plug & Play O/S	• No • Yes	Specifies if manual configuration is desired. No lets the BIOS configure all devices. This setting is appropriate when using a Plug and Play operating system. Yes lets the operating system configure Plug and Play devices not required to boot the system. This option is available for use during lab testing.

Peripheral Configuration Submenu

This submenu is for configuring peripheral ports and devices.

Feature	Options	Description
Serial Port A	• Disabled • Enabled • Auto	Configures serial port A. Auto assigns the first free COM port, normally COM1, the address 3F8h, and the interrupt IRQ4. An * (asterisk) displayed next to an address indicates a conflict with another device.
Parallel Port	• Disabled • Enabled • Auto	Configures the parallel port. Auto assigns LPT1 the address 378h and the interrupt IRQ7. An * (asterisk) displayed next to an address indicates a conflict with another device.
Mode	• Output only • Bi-directional • EPP • ECP	Selects the mode for the parallel port. Not available if the parallel port is disabled. Output Only operates in AT†-compatible mode. Bi-directional operates in PS/2-compatible mode. EPP is Extended Parallel Port mode, a high-speed bi-directional mode. ECP is Enhanced Capabilities Port mode, a high-speed bidirectional mode.
Audio Device	• Disabled • Enabled	Enables or disables the onboard audio subsystem. For boards with no onboard audio subsystem, this option does not appear.
LAN Device	• Disabled • Enabled	Enables or disables the onboard LAN device. For boards with no onboard LAN subsystem, this option will not appear.

IDE Configuration Submenu

This submenu is for configuring IDE devices.

Feature	Options	Description
IDE Controller	• Disabled • Primary • Secondary • Both	Specifies the integrated IDE controller. Primary enables only the primary IDE controller. Secondary enables only the secondary IDE controller. Both enables both IDE controllers.
Primary IDE Master	No options	Reports type of connected IDE device. When selected, displays the Primary IDE Master submenu.
Primary IDE Slave	No options	Reports type of connected IDE device. When selected, displays the Primary IDE Slave submenu.
Secondary IDE Master	No options	Reports type of connected IDE device. When selected, displays the Secondary IDE Master submenu.
Secondary IDE Slave	No options	Reports type of connected IDE device. When selected, displays the Secondary IDE Slave submenu.

Primary/Secondary IDE Master/Slave Submenus

Feature	Options	Description
Drive Installed	No options	Displays the type of drive installed.
Type	• Auto • User	Specifies the IDE configuration mode for IDE devices. User allows capabilities to be changed. Auto fills-in capabilities from ATA/ATAPI device. Maximum Capacity No options Displays the capacity of the drive.
Maximum Capacity	No options	Displays the capacity of the drive.
LBA/Mode	• Disabled • Auto	Selects the translation mode for the IDE hard disk. (This item is read-only unless Type is set to User.)
Block Mode	• Disabled • Auto	Disabled = Data transfers to/from the device occur one sector at a time. Auto = Data transfers to/from the device occur multiple sectors at a time if the device supports block mode transfers. (This item is read-only unless Type is set to User.)
PIO Mode	• Auto • 0/1/2/3/4	Specifies the PIO mode. (This item is read-only unless Type is set to User.)
DMA Mode	• Auto • SWDMA 0/1/2 • MWDMA 0/1/2 • UDMA 0/1/2/3/4/5	Specifies the DMA mode for the drive. Auto = Auto-detected SWDMAn = Single Word DMAn SWDMAn = Multi Word DMAn UDMAn = Ultra DMAn (This item is read-only unless Type is set to User.)
S.M.A.R.T.	• Auto • Disabled • Enabled	Enables/disables S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology). (This item is read-only unless Type is set to User.)
Cable Detected	No options	Displays the type of cable connected to the IDE interface: 40-conductor or 80-conductor (for ATA-100 peripherals).

Diskette Configuration Submenu

This submenu is for configuring the diskette drive.

Feature	Options	Description
Floppy A	• Disabled • 360 KB 5 1/4" • 1.2 MB 5 1/4" • 720 KB 3 1/2" • 1.44 MB 3 1/2" • 2.88 MB 3 1/2"	Specifies the boot sequence from the available devices.

Video Configuration Submenu

This submenu is for configuring video features.

Feature	Options	Description
AGP Aperture Size	• 4MB • 8MB • 16MB • 32MB • 64MB • 128MB • 256MB	Sets the aperture size for the video controller.
Primary Video Adapter	• Integrated • PCI	Selects primary video adapter to be used during boot.
Frame Buffer Size	• 512MB • 1MB • 8MB	Sets the frame buffer size.

USB Configuration Submenu

This submenu is for configuring USB features.

Feature	Options	Description
High Speed USB	• Disabled • Enabled	Set to Disabled when a USB 2.0 driver is not available.
Legacy USB Support	• Disabled • Enabled	Enables/disables legacy USB support.
USB 2.0 Legacy Support	• FullSpeed • HiSpeed	Configures the USB 2.0 legacy support to Hi-Speed(480 Mbps) or Full-Speed (12 Mbps).

FAN Control Configuration

This submenu is for configuring CPU FAN speed.

Feature	Options	Description
FAN Control	• Enabled • Disabled	Enables or disables controlling the CPU fan speed according to CPU temperature.

Security Menu

This menu is for setting passwords and security features.

Feature	Options	Description
Set Supervisor Password	Password can be up to seven alphanumeric characters.	Specifies the supervisor password.
Set User Password	Password can be up to seven alphanumeric characters.	Specifies the user password.

If you set both the Supervisor and User passwords, you must set the Supervisor password first. Once both are set, you can enter either the Supervisor password or the User password to access the Setup or the computer.

The table shows the effects of setting the Supervisor and User passwords.

Password set	Supervisor mode	User mode	Password during boot	Password to enter the Setup Program
Neither	Can change all options	Can change all options	None	None
Supervisor only	Can change all options	N/A	Supervisor	Supervisor
Both	Can change all options	Can change a limited number of options	Supervisor or User	Supervisor or User

NOTE

Be sure to remember the password you enter or write it down. You will not be able to access the computer the next time you turn it on or run SETUP without the password.

Deleting or Changing a Password

If you want to delete the current password, follow these steps:

1. Press Enter at Set User Password or Set Supervisor Password from the Security menu.
2. Type the current password in "Enter Current Password" and press Enter.
3. Just press Enter in "Enter New Password" to delete your current password.
4. When you see "Confirm New Password", press Enter again.
5. When you see the following message, press Enter.

```
Changes have been saved.
```

To change the current password, type your new password before pressing Enter on steps 3 and 4.

Power Menu

This menu is for setting power features.

Feature	Options	Description
ACPI	No options	Sets the ACPI power management options. When selected, displays the ACPI submenu.

ACPI Submenu

This submenu is for configuring the ACPI power options.

Feature	Options	Description
ACPI Suspend State	• S1 State • S3 State	This is used to enable or disable the feature of booting up the system on a scheduled time/date from the soft off (S5) state.
Wake on LAN from S5	• Stay Off • Power On	If Resume By Alarm is set to Enabled, the system will automatically resume (boot up) on a specific date/hour/minute/second specified in these fields.

Boot Menu

This menu is for setting the boot features and the boot sequence.

Feature	Options	Description
Boot from Network	• Disabled • Enabled	Disables or enables boot from Network.
USB Boot	• Disabled • Enabled	Disables or enables booting to USB boot devices.
Boot Device Priority	No options	Specifies the boot sequence from the available types of boot devices. When selected, displays the Secondary IDE Slave submenu.
Hard Disk Drives	No options	Specifies the boot sequence from the available hard disk drives. When selected, displays the Secondary IDE Slave submenu.
Removable Devices	No options	Specifies the boot sequence from the available removable devices. When selected, displays the Secondary IDE Slave submenu.
ATAPI CD-ROM Drives	No options	Specifies the boot sequence from the available ATAPI CD-ROM drives. When selected, displays the Secondary IDE Slave submenu.

Boot Device Priority Submenu

You can select the boot sequence from the available devices.

To specify boot sequence:

1. Select the boot device with < ↑ > or < ↓ >.

2. Press <+> to move the device up the list or <-> to move the device down the list.

Hard Disk Drives Submenu

This submenu is for setting hard disk drive priority.

Feature	Options	Description
1st Drive	Dependent on installed hard drives	Specifies the boot sequence from the available hard disk drives. To specify boot sequence: 1. Select the boot device with < ↑ > or < ↓ >. 2. Press <Enter> to set the selection as the intended boot device.

Removable Devices Submenu

This submenu is for setting removable device priority.

Feature	Options	Description
1st Drive	Dependent on installed removable devices	Specifies the boot sequence from the available removable devices. To specify boot sequence: 1. Select the boot device with < ↑ > or < ↓ >. 2. Press <Enter> to set the selection as the intended boot device.

ATAPI CD-ROM Drives Submenu

This submenu is for setting ATAPI CD-ROM drive priority.

Feature	Options	Description
1st Drive	Dependent on installed ATAPI CD-ROM drives	Specifies the boot sequence from the available ATAPI CD-ROM drives. To specify boot sequence: 1. Select the boot device with < ↑ > or < ↓ >. 2. Press <Enter> to set the selection as the intended boot device.

NOTE

This boot device submenu appears only if at least one boot device of this type is installed. This list will display up to four ATAPI CD-ROM drives, the maximum number of ATAPI CD-ROM drives supported by the BIOS.

Exit Menu

This menu is for exiting the Setup program, saving changes, and loading and saving defaults.

Feature	Description
Exit Saving Changes	Exits and saves the changes in CMOS RAM.
Exit Discarding Changes	Exits without saving any changes made in Setup.
Load Setup Defaults	Loads the default values for all the Setup options.
Discard Changes	Discards changes without exiting Setup. The option values (present when the computer was turned on) are used.

Chapter 3
Installing Board Options

This chapter describes how to install board options in your computer. You can use these instructions to install a variety of devices and board options. Although your board options may look a bit different from the ones illustrated herein, you can install and remove it the same way.

Before You Begin

WARNINGS

The procedures in this chapter assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.

Disconnect the computer from its power source and from any telecommunications links, networks, or modems before performing any of the procedures described in this chapter. Failure to disconnect power, telecommunications links, networks, or modems before you open the computer or perform any procedures can result in personal injury or equipment damage. Some circuitry on the motherboard can continue to operate even though the front panel power button is off.

CAUTION

Electrostatic discharge (ESD) can damage components. Perform the procedures described in this chapter only at an ESD workstation. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

Installing and Removing the Processor

The processor that you install must be compatible with mPGA478 socket.

Installing the Processor

To install the processor, follow these steps:

1. See the illustration in "Motherboard Overview" in Chapter 1 for the location of the processor socket.

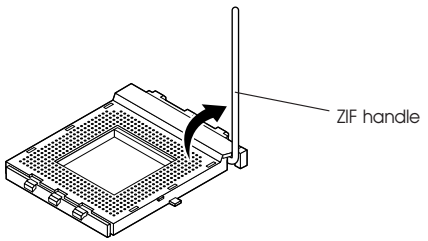
NOTE

According to processor type, your actual process may be slightly different from one described below.

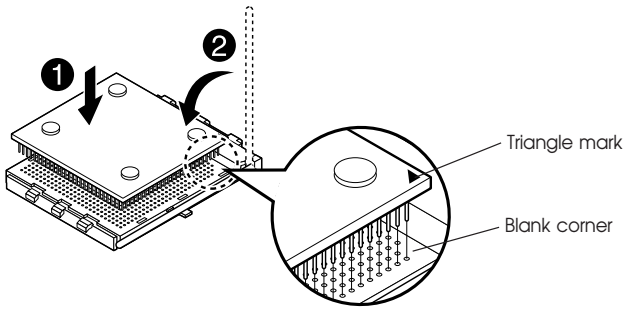
WARNING

A processor you plan to install should have a fan type heatsink attached to it to prevent overheating. If there is no fan type heatsink, the processor may overheat and cause damage to both the processor and motherboard.

2. Pull the ZIF handle sideways away from the socket then upward to 90-degree angles.

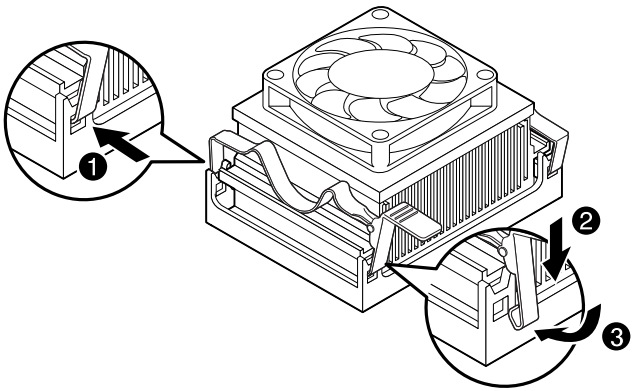


3. Locate the new processor you are installing over the socket so that the marked with triangle corner on the processor can be aligned with the first blank corner on the socket. Then gently push the processor straight into the socket until its pins are completely inserted into the holes of the socket.



4. Press the ZIF handle back to close it.

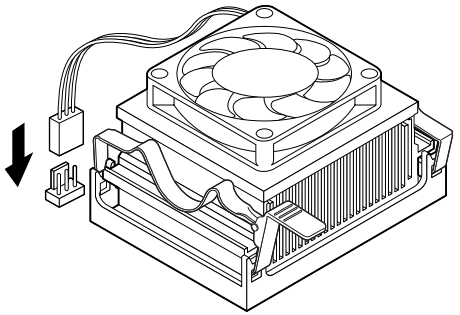
5. Attach the heatsink to the processor socket.



NOTE

Depending on the model, the heatsink may vary.

6. Connect the fan connector cable from the CPU fan to the CPU fan connector on the motherboard.



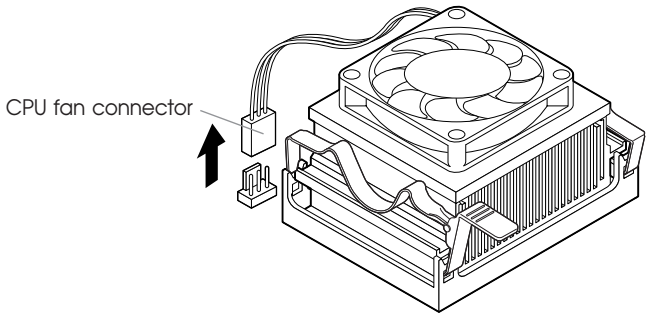
NOTE

If you install the processor chip in the wrong orientation, you may burn the chip and void your warranty.

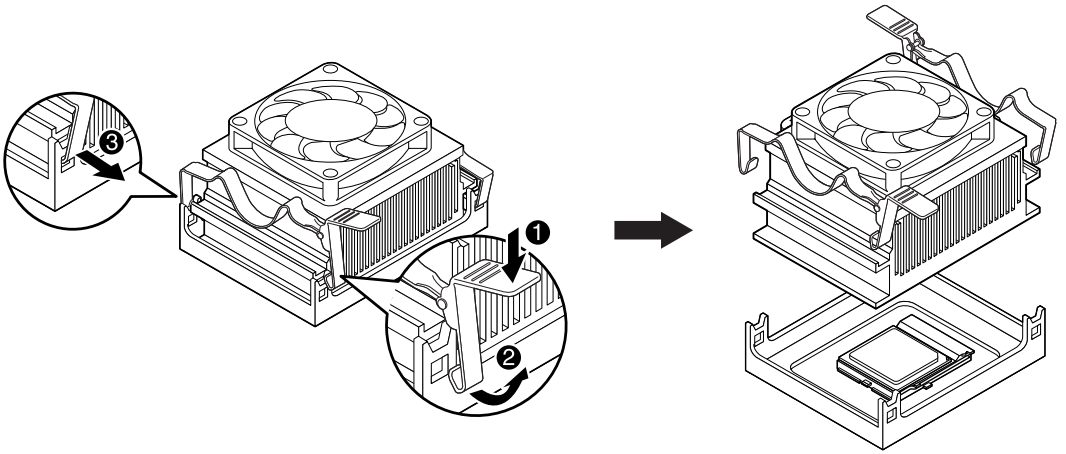
Removing the Processor

To remove the processor, follow these steps:

1. Unplug the cable connector from the CPU fan connector on the motherboard.



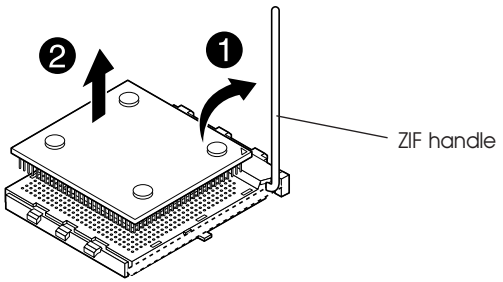
2. Remove the heatsink by releasing both tabs on the heatsink that secure the heatsink to the socket.



NOTE

Depending on the model, the heatsink may vary.

3. Pull the ZIF handle sideways away from the socket then upward to 90-degree angles and carefully pull the chip straight up from the socket.



4. Press the ZIF handle back to close it.

Installing and Removing Memory Modules

The motherboard has two dual inline memory module (DIMM) sockets. You can increase the amount of memory in your computer up to 2 GB.

Each DIMM socket supports the following memory features:

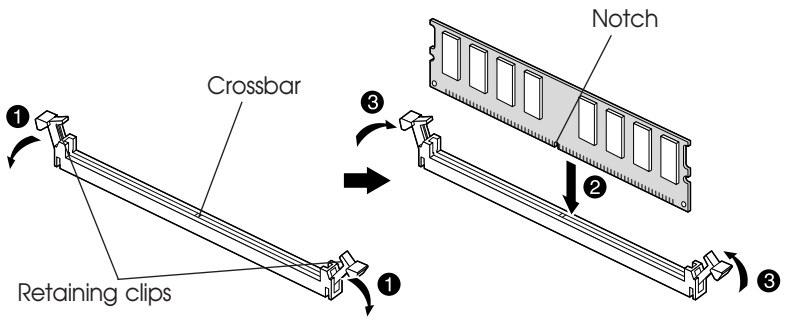
- 184-pin 2.5 V DIMM with gold-plated contacts
- 200/266/333 MHz Non-ECC unbuffered DDR SDRAM
- Single or double sided DIMM in the following sizes:

DIMM Size	Non-ECC Configuration
64MB	8 Mbit × 64
128MB	16 Mbit × 64
256MB	32 Mbit × 64
512MB	64 Mbit × 64
1 GB	128 Mbit × 64

Installing a Memory Module

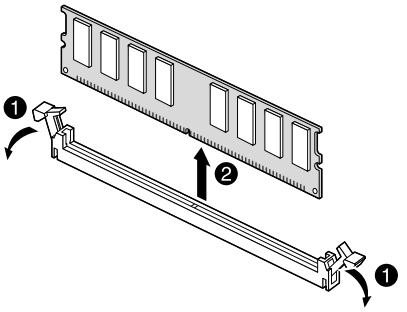
Follow these steps to install DIMMs:

1. Release the plastic retaining clips at each end of the socket by pressing the clips outward until they snap open.
2. Orient a DIMM to the socket so the notch in the DIMM connector are aligned with the crossbars in the socket.
3. Press the DIMM straight down until retaining tabs snap into place around the ends of the DIMM.



Removing a Memory Module

To remove memory modules, press the retaining clips outward simultaneously until the DIMM disengages from the socket and then carefully remove the DIMM from the socket.

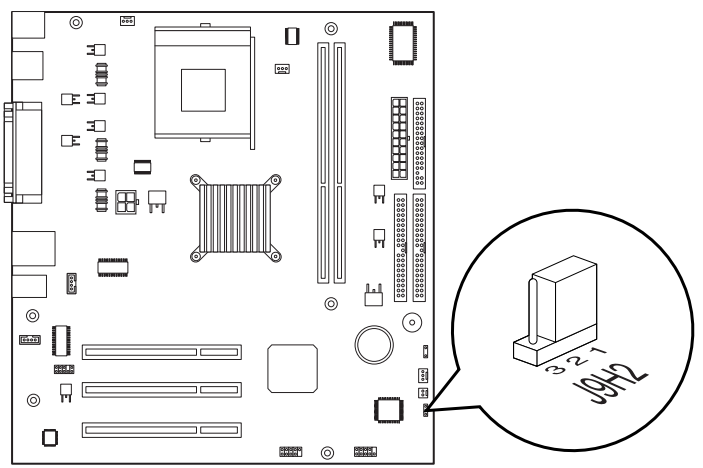


Changing the Jumper

The jumper is a small electrical connector that control circuit or function in your system. Jumper is a small block on a circuit board with two or more pins emerging from them.
To change a jumper setting, pull the plug off its pins and carefully fit it down onto the pins indicated.

The jumper setting in your computer is preset at the factory; however, you can alter the function by changing the standard setting:

- Determines the BIOS Setup program's mode



Function/Mode	Jumper Setting		Configuration
Normal	1-2	3 ○ ■ 1	The BIOS uses current configuration information and passwords for booting.
Configure	2-3	3 ■ □ 1	After the POST runs, Setup runs automatically. The maintenance menu is diplayed.
Recovery	None	3 ○ ○ □ 1	The BIOS attempts to recover the BIOS configuration. A recovery diskette is required.

CAUTION

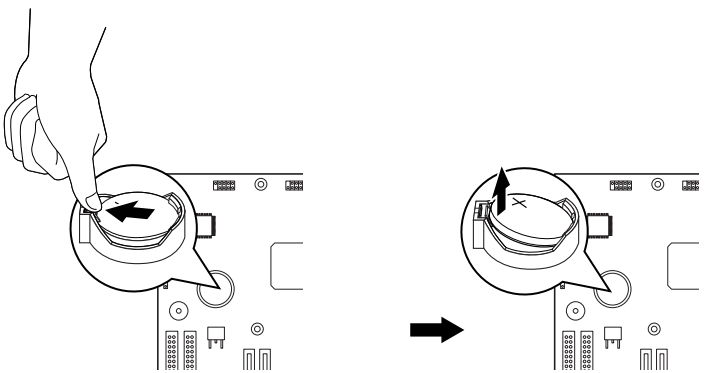
Do not change the jumpers with the power on. Always turn off the computer and unplug the power cord from the computer before changing the jumpers.

Replacing the Battery

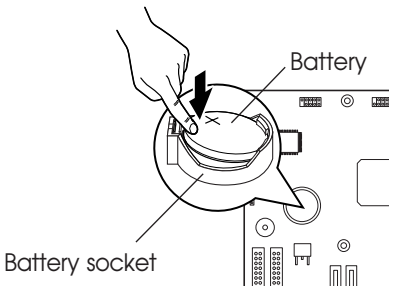
The 3 V, coin-cell CR2032-type battery on the mainboard provides power to the real-time clock and CMOS RAM. It has an estimated lifetime of three years if the computer is turned off.

To replace the battery, follow these steps:

1. Turn off all peripheral devices connected to the computer and then turn off the computer.
2. Disconnect all cables from computer.
3. Remove the system cover.
4. Remove the battery out of its socket with your fingers.



5. Insert the new battery with the "+" side as shown below.



6. Replace the system cover.
7. Connect all cables to your computer.

The Things to do in Post-installation

After you install or remove board options, if necessary, be sure to run Setup program to update the configuration of your system. See Chapter 2 for detail information.

If you installed a new optional equipment and Windows has installed in your system, you need to have Windows detects it. See Windows manual and the manual that came with your optional equipment for detail information.

Blank

Appendix A
Specifications

Feature	Specifications
Form Factor	Micro ATX
Processor	• Intel® Pentium® 4 processor • 533 MHz and 400 MHz system bus with an integrated 256K L2 cache **NOTE** *The processor depends on the model of computer you purchased.*
Memory	• Two 184-pin 2.5 V DIMM sockets • Each slot supports up to 1 GB memory of 200/266/333 MHz Non-ECC • Unbuffered DDR Synchronous DRAM (DDR SDRAM)
	Video memory • Use main memory (Intel Dynamic Video Memory Technology) **NOTE** *As your system has sharing memory architecture using the main memory for video memory, the usable main memory size is less than real size when the computer is running*
Main Chipset	Intel® 82845GV Graphics Memory Controller Hub (GMCH) • Hyper-Threading technology support • Processor/Host bus support • Integrated DRAM controller • Supports AGP 1X/2X/4X data transfers and 2X/4X Fast Writes • Integrated graphics controller (3D/2D graphics) • Power management functions
	Intel® 82801DB I/O Controller Hub (ICH4) • Support for the PCI interface • Integrated IDE controller ; Ultra DMA 33, ATA-66/100 • USB 2.0 and DMA controller • Power management logic • Real-time clock • Support for AC '97 audio devices
	Firmware Hub (FWH) • Firmware Hub (FWH) interface
I/O Controller	NSC PC87372 Super I/O Controller • Floppy drive interface • One multimode parallel port • FIFO serial port • Keyboard and mouse controller

Feature	Specifications
Built-in Audio Controller	Integrated Audio Controller in Intel ® 82801DB I/O Controller Hub (ICH4) • AC '97 2.2 Compliant • AC '97 Link for Audio CODEC • Separate Independent PCI Function for Audio
	Realtek ALC202A Audio Codec `97 • AC '97 2.2 compatible • Industry Leading Mixed Signal Technology • 18-bit stereo full-duplex Codec with independent and variable sampling rate • Four analog line-level stereo inputs for connection from LINE IN, CD, VIDEO and AUX • Advanced power management
Built-in LAN Controller	Integrated LAN Media Access Controller in Intel ® 82801DB I/O Controller Hub (ICH4) • PCI Bus Master interface • CSMA/CD Protocol Engine • Serial CSMA/CD unit interface that supports the 82562ET (10/100 Mbps Ethernet) • PCI Power Management - Supports ACPI technology - Supports LAN wake capabilities
	Intel ® 82562ET physical layer interface device • Basic 10/100 Ethernet LAN connectivity • Supports RJ-45 connector with status indicator LEDs on the back panel • Full device driver compatibility • ACPI support • Programmable transit threshold • Configuration EEPROM that contains the MAC address
Expansion Slots	• Three PCI slots
Other Features	• Phoenix BIOS • Plug and Play compatible • Advanced Power Management (APM) and Advanced Configuration Power Interface (ACPI)
Power Supply	The power supply specifications are inscribed on the label that attached on the power supply chassis in the system. To see the specifications of the power supply, refer to the label. If you want to see the label, you need to remove the cover of your system.
Environmental Requirement	• Temperature - Operation : +5° C to 35° C - Storage : -10° C to 55° C • Humidity - Operation : 30% to 80% (No condensation) - Storage : 20% to 90%

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